



CHAPTER 6

**Recent Developments in the
Information Technology Sector in
North Korea: an NGO Perspective***Lawrence J. Ho***Recent Developments in the DPRK⁷⁶**

North Korea lives in a tumultuous time. The “arduous march” of the late 1990s is over. Now, the government urges the people to devote themselves to building a “powerful and prosperous nation.” Most of the country is still closed to outsiders, and foreigners are not allowed to

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visit many important industrial and agricultural districts, let alone the hinterland in North Korea. It is not an exaggeration to say that in the countryside, as a rule, government offices, schools, and hospitals continue to rely on broken and/or malfunctioning equipment. Most work units do not have televisions or telephones let alone faxes or computers. Times are still very difficult for these rural areas, and humanitarian concerns still need to be addressed there. In some cases, it feels like the 1950s, like living in an episode of the television show M*A*S*H.

Observations herein are primarily focused on the city of Pyongyang and the “privileged” two million people who live there. One noticeable change, particularly since the June 2000 Summit in Pyongyang, is the increased number of auto vehicles. In the late 1990’s, streets were almost deserted except for pedestrians. In 2002, downtown streets have many more cars, primarily Japanese-made automobiles (noticeable because of their right hand drive), and these are not just White Toyota Landcruisers with the U.N. Logo emblazoned on the doors. Sometimes, around 5:30 pm, there is actually traffic congestion, whereas previously one would usually have the road very much to oneself except for the traffic controllers who stand in the middle of intersections at all times of the year. In addition, growing consumerism reveals increased activities of the black marketeers who trade in antiques, gold, and second-hand consumer electronics. On the black market, one can even find a 32-inch Sony television on sale for about US\$ 2,000.

One should pay attention to the implementation of new economic legislation designed to move the DPRK towards a market-economy “with *juch’e* characteristics.” These new laws and directives came into force on July 1, 2002. Still, the country seems to be in a wait-and-see mode because a

number of previous government attempts to introduce independent profit-generating systems and to decentralize the economic powers of the government have so far failed to make any difference.

The recent legislation has already generated a few changes. Unfortunately, some of them have an adverse affect on the international community. Specifically, hotel accommodation prices are rising, visa extensions for foreigners cost more, and rentals of housing/office space are also increasing – sometimes even two or threefold. These price hikes cannot help but adversely affect humanitarian and developmental projects as they are often based on the limited amount of available funding.

Average salaries and wages of North Korean citizens rose from ten to twenty times. At the same time, there were significant increases in rice and corn prices, transportation costs, residential electricity costs, and water use prices. The domestic North Korean currency, *won*, was devalued, reportedly, to an exchange rate of US\$ 1 to 150/200 Korean won. However, since foreign residents in the North are allowed to use only U.S. dollars, they can hardly notice any realistic changes. Actually, during the past several months, especially during the massive Arirang Festival (a huge cash cow for the DPRK government) at May Day Stadium, one could notice many more kiosks and shops selling goods and offering private services than ever.

One can only speculate and hope that the IT revolution, when it comes to North Korea, if ever, may save the nation and turn the tide in favor of peaceful economic development. The DPRK is not an unlikely or illogical place to find talent and minds, because, after all, it does take brilliant engineers, technicians, and software scientists to develop and launch missiles. The hope is that these

brilliant minds could be focused on civilian IT activities and commercial (i.e., non-military but profit-based) uses as a productive way to spin off a peaceful high-tech industry.

Computers and IT Hardware

With regard to domestic computer/hardware production, the DPRK media claims that by early 2002, North Korean companies had successfully produced several thousand computers with the mid-range Pentium/Pentium II capabilities. If true, this would be a welcome addition, considering media reports in 2001 that the DPRK only had slightly more than 3,000 desktop computers (most of them 386 or 486 platforms) in the entire country.

In addition to domestic production, the DPRK does have access to and facilities equipped with foreign produced hardware made in China, Taiwan and even the United States, which is definitely state of the art. There are a number of computer institutes where one can find more than 200-300 Acer (a Taiwanese CPU Company) Pentium IV desktop computers hooked up to multiple Sun Microsystem Servers running Microsoft Windows platforms with programs such as Microsoft Office, Adobe Photoshop and other word-processing/desktop publishing software. It is interesting to note that there are very few G3/G4 Apple computers. Some facilities such as Pyongyang's famous 425 Animation Studios do have access to Apple platforms used in the development of animated cartoons and movies.

It should be noted that the facilities where one can find such advanced technological capabilities are primarily educational and research-oriented, and would include locations like the Korea Computer Center, Kim Il Sung University, and other technical universities. In fact, the Korea Computer Center, one of the DPRK's national IT

research centers, is said to be directly accountable to Kim Jong Il and his Secretariat and does not fall under the authority of any governmental ministry. The KCC was established in 1990; it employs more than 800 staff, and it is run very much like a for-profit corporation, with a business-minded management.

Unfortunately, as many NGOs know all too well, North Korea has good computer facilities mostly at an academic/research level, and they do not exist in day-to-day government organs like the Ministry of Foreign Affairs or the Flood Damage Rehabilitation Committee (FDRC). It is difficult enough to phone or fax our DPRK counterparts; but e-mailing them is unthinkable. One exception is the DPRK Embassy in Beijing, which can be contacted by e-mail and then will fax on information to the DPRK ministries. It goes without saying that foreign NGO representatives are not allowed to visit any military installations and therefore have no idea regarding the use of computer hardware in the area of weapons technology.

IT Software Development

DPRK companies and research institutes continue to make progress in software development. The first DPRK International Computer Software Expo was held in Beijing on April 20-22, 2002. Software programs displayed at that show included various games, handwriting recognition, machine tools (3D and CAD applications), and driving-simulations for Pyongyang (accompanied with the road signs that declare “Long Live the Great Leader Kim Il Sung”). The “GO” game won the First Prize in Asian Computer Gaming Competition. Another interesting product was a five-volume CD-ROM encyclopedia including the video clips of Kim Il Sung’s major speeches.

North Korean companies are reported to work on word-processing software in both Tongil Word and Unified Word systems, which are compatible with Korean and English-based Microsoft Windows platforms. One must remember that companies like Microsoft and IBM continue to honor the U.S. sanctions on the DPRK, including the outreach to developers, distributors, and customers. North Korea is believed to frequently obtain many software products such as the office suites from Microsoft/Corel/Adobe through piracy or from the black or gray markets.

Computer Connectivity, Internet Access and Use, Website Development

When the Dear Leader Kim Jong Il said good-bye to the U.S. Secretary of State Albright at the end of her visit to Pyongyang in October 2000, he reportedly gave her his e-mail address and told her to communicate with him by e-mail. This is a telling example highlighting the fact that Kim Jong Il is personally interested in the Internet and e-mail development in his country. Without doubt, some senior WPK officials, many DPRK Cabinet members, and some high-ranking government ministerial officials have access to the World Wide Web. However, Internet access and use remain to be a privilege and restricted to the selected few.

Currently, in order to access e-mail and the Internet from DPRK, most NGOs and the U.N. staff in Pyongyang have no alternative but to make long distance telephone calls to China and hook up with an Internet Service Providers (ISP) based in Beijing or Shanghai. Of course, long-distance charges were highly prohibitive with calls to China in the range of US\$ 2 per minute and to the United States at US\$ 10/minute.

An exciting development, especially if one happens to be one of the 300 or so expatriates residing in Pyongyang, is the existence of a lone Internet café. The DPRK's Jangsaeng General Trade Company and the ROK's Hoonnet Company established that inter-Korean joint venture in March 2002. The original charge for the high-speed access to the Internet via Shanghai was at first around US\$ 100/hour, but soon the owners dropped it to US\$ 10/hour in order to increase their customer base. Bearing in mind the access and cost considerations, one can wonder who can actually use the Internet café among DPRK citizens. Besides, it is not easy to locate the café, and the surly guard outside the compound does not appear particularly friendly to foreigners, let alone North Korean nationals. Regular users of the Internet service at the café include expatriate staff of various NGOs, foreign embassies' personnel, and various United Nations Agencies like the World Food Program and UNDP.

With regard to the Web site hosting and management services, North Korea currently operates at least five official Internet homepages in Japan and one in China. These sites are primarily news organizations and include the following four larger news media resources:

1. The Korean Central News Agency of DPRK (www.kcna.co.jp)
2. The Choson Sinbo (www.korea-np.co.jp)
3. The People's Korea (www.korea-np.co.jp)
4. DPRKorea Infobank (www.dprkorea.com) – access to Pyongyang Times.

5. Naenara (<http://www.kcckp.net>) hosted by Korea Computer Center in Pyongyang

In addition to these Web sites, the Silibank Corporation launched an e-mail service in December 2001, whereby foreigners can set up e-mail accounts to exchange e-mail with DPRK citizens and companies. It is still unclear who these DPRK nationals might be and which DPRK organizations may have access to this service. The founder of this service, Silibank (www.silibank.com) conveniently has mail servers in Shenyang and Pyongyang. The communication link allows for the e-mail relay service to be performed every half hour between these two servers. Originally, the service was provided to any user on the basis of paid memberships. But, recently membership fees have been waived in order to gain market share. Although there is still a charge for the e-mail service use, which ranges from a low of US\$ 2 to a high of US\$ 52.50, depending on the size of the e-mail document transmitted.

Furthermore, the DPRK government is reported to be exploring a number of options for developing a mobile telecommunications infrastructure, mostly with the ROK companies. Needless to say, one should expect the introduction of wireless phone technology in the North sometime in the future. It is easy to guess that the ramifications of the mobile phone use for humanitarian and NGO work will be tremendous; especially once communication networks become available outside Pyongyang where most of the humanitarian activities take place.

NGO Developments

Historically, the earliest NGOs were invited to the DPRK around 1996-97 primarily to help in the humanitarian sector with food and public health supplies because of the disasters of flood, famine, and drought in the countryside. It was apparent that the food and agricultural crisis was not just a result of natural disasters. Therefore, it will not be resolved in light of current DPRK agricultural inputs and adaptations. Energy also continues to be in great deficit in North Korea. One only has to look out of a hotel room in Pyongyang to see just how dark and eerily silent that city of two million people is with so few lights visible.

American NGOs continue to have difficulties in accomplishing their objectives in the DPRK. No American NGOs have their own staff on the ground in Pyongyang and often struggle to get adequate monitoring of their own humanitarian aid. No real changes are likely to be made in American NGO areas until there are some staffing changes within the DPRK Ministry of Foreign Affairs and serious reshuffling at some of the DPRK Missions.

However, all is not so dark and dim. One needs to be a little optimistic by nature to be engaged in activities in the DPRK. Canada, Australia and most of the European Union initiated diplomatic relations with the DPRK government over the past two years. British and German Embassies have recently been opened in Pyongyang and now about three hundred foreigners live in Pyongyang, including the staff at the U.N. offices and diplomatic personnel.

The DPRK government seems to view some countries like Canada as meaningful dialogue partners, despite growing

hostility in North Korea's relations with the United States in the wake of the U.S. President's "Axis of Evil" speech. North Korea may hope to model its ongoing relationship with Canada after the kind of a relationship that Cuba currently enjoys with Canada.

Typically, foreign NGOs in North Korea are involved in humanitarian and relief issues, including feeding the hungry, helping with water purification, and providing medical supplies. These are very important projects and in no way should they be marginalized. However, three concerns continue to hover over these activities. The first is proper on-the-ground monitoring of aid distribution in order to make sure that it goes to the right hands, and not to the military and the privileged elite. The second problem is that while these humanitarian supplies do help, they also reinforce the cycle of dependence and need on behalf of aid-addicted North Koreans. The third concern is that the DPRK government is very adept at blackmail and feels no compunctions about demanding goodies on the world stage without pay and extorting levies from each of their "guest" NGOs.

This author is an ardent proponent of advancing beyond simple emergency food and medicine relief and identifying sustainable development programs as the next stage of the NGO activity in DPRK. To that end, NGOs must seek to identify potential profit-making enterprises and team up with their North Korean counterparts in order to make a difference in the North Korean long-term economic recovery strategy. In particular, worth mentioning is the project co-sponsored by the GAIN and the Korea Computer Center. This is a joint venture, the first of its kind, aimed at training North Korean professionals in computer graphics design. The Canadian NGO GAIN agreed to bring basic Apple computers and graphics software to the North, in

addition to training the North Korean staff residing in Pyongyang. The North Korean partners are supposed to provide facilities and accommodations for the locally-based staff. One can hope that NGO-corporate partnerships like this may herald the beginning of a greater openness of the North Korean government to foreign technical expertise. Wherever possible, it is useful to engage in these forms of NGO activities in order to encourage the relocation of North Korean IT personnel and resources away from the military sector and towards more commercial or civilian uses.

A very interesting and promising joint venture initiated in late spring 2001 involves the establishment of bilateral research collaboration between the (KCUT) and Syracuse University in the U.S., under the sponsorship of the U.S.-based Korea Society, Ford Foundation, and the Henry Luce Foundation in New York. Its aim is to develop an accessible and trusted IT-driven public infrastructure within the DPRK. As of May 2003, the joint venture partners held five joint research sessions, four in Syracuse and one in Pyongyang. They were conducted in English and were focused on systems-assurance issues including digital libraries, lab design and maintenance, decision support, and formal methods for proving correctness. Intensive research collaboration between the KCUT and Syracuse University can serve as an important driver of internally-directed efforts to strengthen the civilian sector within the DPRK as well as enhance the ability of the DPRK to manage domestic issues such as public health and the environment.

One should be cautious not to overstate the roles and influence of foreign NGOs in North Korea. They are important in what they do, and they do make a difference on the ground in the North. But foreign NGOs will certainly not be able to change the DPRK's current political

system. Change is inevitable, but the main driver of change is information, or the “I” in “IT.” And international NGOs can help bring more information to the secluded North Korean society.

A short personal anecdote may convey the reality of the situation in the DPRK better than facts and figures ever can. I was in the DPRK on Sept. 11, 2001. I only heard about the World Trade Center bombing and Pentagon attacks through the word-of-mouth in the foreign community, and received a confirmation from the DPRK Ministry of Foreign Affairs only on Sept. 13th. I was able to watch the first images of the tragedy only on CNN at my Beijing hotel on Sept. 15. It is hard to believe that any foreigner had to leave the “hermit kingdom” and go to China to see and hear the news that shook the world.

As information begins to flow in or at least becomes more accessible to the North Korean people, gradually the residents of Pyongyang and possibly even in the countryside will begin to realize that there is a whole world out there (some for the better and some for the worse). Wider and less controlled information dissemination is certain to introduce the average North Korean to a different form of reality, which is life in the twenty-first century. As in China, once the country is opened to outside information, there is no way to go back.

Conclusion

In conclusion, one should be reminded that despite the chilled U.S.-DPRK relations, Canada and other countries such as the European Union members continue to play an important role in the international interaction with the DPRK on the diplomatic stage. It is worth mentioning that the contrast in their relations with Pyongyang before and

after establishing diplomatic relations was quite stark. For instance, Canadians went from being perceived as the foresworn enemies since the time of the Korean War to instantaneous friends. Hence, the world must engage the DPRK and draw the “hermit kingdom” further into the global community.

This author is a guarded optimist on North Korea’s future. Inevitably, if history repeats itself, the experiences of East Germany, the former Soviet Union, and China show persuasively that as information and access to information through the Internet and wireless technology increase, any society is certain to undergo fundamental changes in its organizational and political orientation. Although the prospects for structural changes in the North are still unclear, everyone, including the Dear Leader Kim Jong Il himself, seems to agree that the IT revolution is important and is a must, even though it may mean unparalleled changes in the North Korean society and the lives of ordinary Korean citizens.

One should hope and pray that the forces of change for good and for peace will prevail over the post-Cold War chaos and the “axis of evil” type sentiments. One should hope that the IT revolution and its useful civilian applications will help move the DPRK to a place where it can begin to support itself and make a meaningful contribution to the world, because the alternatives for the Korean Peninsula are too terrible to contemplate.

